WHAT IS CLAIMED IS:

1. A substantially homogenous preparation of N-terminally chemically modified G-CSF or analog thereof, optionally in a pharmaceutically acceptable diluent, carrier or adjuvant.

2. A preparation of claim 1 where said G-CSF is chemically modified with a chemical selected from the group consisting of dextran, poly(n-vinyl pyurrolidone), polyethylene glycols, propropylene glycol homopolymers, prolypropylene oxide/ethylene oxide co-polymers, polyoxyethylated polyols and polyvinyl alcohols.

3. A preparation of claim 2 where said G-CSF or analog thereof is chemically modified with polyethylene glycol.

4. A preparation of claim 3 said polyethylene glycol has a molecular weight of between about 2 kDa and 100 kDa.

5. A preparation of claim 4 wherein said polyethylene glycol has a molecular weight of between about 6 kDa and 25 kDa.

6. A preparation of claim 1 wherein said preparation is comprised of at least 90% N-terminally monopegylated G-CSF or analog thereof and at most 10% unpegylated G-CSF or analog thereof.

7. A preparation of claim 6 wherein said preparation is comprised of at least 95% N-terminally monopegylated G-CSF or analog thereof and at most 5% unpegylated G-CSF or analog thereof.

8. A preparation of claim 1 wherein said G-CSF has the sequence identified in SEQ. ID No. 1.

9. A substantially homogenous preparation of N-terminally monopegylated G-CSF, optionally in a pharmaceutically acceptable diluent, carrier or adjuvant, wherein: (a) said G-CSF has the amino acid sequence identified in SEQ. ID No. 1; (b) said G-CSF is monopegylated with a polyethylene glycol moiety having a molecular weight of about 12 kDa.

10. A pharmaceutical composition comprising: (a) a substantially homogenous preparation of monopegylated G-CSF, said monopegylated G-CSF consisting of a polyethylene glycol moiety having a molecular weight of about 12 kDa connected to a G-CSF moiety solely at the N-terminus thereof via an amine linkage; (b) fewer than 5% non-pegylated G-CSF molecules; and (c) a pharmaceutically acceptable diluent, adjuvant or carrier.

11. A method of treating a hematopoietic disorder comprising administering a therapeutically effective dose of a preparation of any of claims 1-10.

✓ 12. A method for attaching a water soluble polymer to a protein or analog thereof, wherein said water

soluble polymer has a single reactive aldehyde group, said method comprising:

(a) reacting a protein moiety with a water soluble polymer moiety under reducing alkylation conditions, at a pH sufficiently acidic to selectively activate the α-amino group at the amino terminus of said protein moiety so that said water soluble polymer selectively attaches to said α-amino group; and

(b) obtaining the reaction product and

(c) optionally, separating the reaction products from unreacted moieties.

13. A method of claim 12 wherein said polymer is pharmaceutically acceptable.

14. A method of claim 12 wherein said water soluble polymer is selected from the group consisting of dextran, poly(n-vinyl pyurrolidone), polyethylene glycols, propropylene glycol homopolymers, prolypropylene oxide/ethylene oxide co-polymers, polyoxyethylated polyols and polyvinyl alcohols.

15. A method of claim 14 wherein said polymer is polyethylene glycol.

16. A method of claim 12 wherein said reducing alkylation reaction involves the use of a reducing agent selected from sodium borohydride, sodium cyanoborohydride, dimethylamine borate, timethylamine borate and pyridine borate.

17. A method for attaching a polyethylene glycol molecule to a G-CSF molecule, wherein said polyethylene glycol molecule has a single reactive aldehyde group, said method comprising:

(a) reacting said G-CSF with said polyethylene glycol molecule under reducing alkylation conditions, at a pH sufficiently acidic to selectively activate the α-amino group at the amino terminus of said G-CSF; and

(b) obtaining the pegylated G-CSF and

(c) optionally, separating the pegylated G-CSF from non-pegylated G-CSF.

18. A method of claim 17 wherein said polyethylene glycol molecule has a molecular weight of about 6 kDa to about 25 kDa.

19. The pegylated G-CSF product produced by the process of claim 17.

20. Chemically modified consensus interferon comprised of a consensus interferon protein moiety connected to at least one water soluble polymer moiety.

21. A chemically modified consensus interferon of claim 20 wherein said consensus interferon moiety is selected from the group consisting of IFN-con$_1$, IFN-con$_2$, and IFN-con$_3$.

22. A chemically modified consensus interferon of claim 21 wherein said water soluble polymer is pharmaceutically acceptable.

23. A chemically modified consensus interferon of claim 20 wherein said water soluble polymer is selected from the group consisting of dextran, poly(n-vinyl pyurrolidone), polyethylene glycols, propropylene glycol homopolymers, prolypropylene oxide/ethylene oxide co-polymers, polyoxyethylated polyols and polyvinyl alcohols.

24. A chemically modified consensus interferon according to claim 23 wherein said water soluble polymer moiety is polyethylene glycol.

25. A chemically modified consensus interferon according to claim 20 wherein said water soluble polymer moiety is connected to said consensus interferon moiety directly without an additional linkage group.

26. A chemically modified consensus interferon comprised of IFN-con$_1$ connected to at least one polyethylene glycol moiety.

27. Pegylated consensus interferon.

28. A method for attaching a water soluble polymer to consensus interferon, wherein said water soluble polymer has a single reactive aldehyde group, said method comprising:

(a) reacting a consensus interferon moiety with a water soluble polymer moiety under reducing alkylation conditions, at a pH sufficiently acidic to selectively activate the α-amino group at the amino terminus of said consensus interferon moiety; and

(b) obtaining the reaction product and

(c) optionally, separating the reaction products from unreacted moieties.

29. A method of claim 28 wherein said polymer is pharmaceutically acceptable.

30. A method of claim 28 wherein said water soluble polymer is selected from the group consisting of dextran, poly(n-vinyl pyurrolidone), polyethylene glycols, propropylene glycol homopolymers, prolypropylene oxide/ethylene oxide co-polymers, polyoxyethylated polyols and polyvinyl alcohols.

31. A method of claim 30 wherein said polymer is polyethylene glycol.

32. A method of claim 28 wherein said reducing alkylation reaction involves the use of a reducing agent selected from sodium borohydride, sodium cyanoborohydride, dimethylamine borate, timethylamine borate and pyridine borate.

✓ 33. A method for attaching a polyethylene glycol molecule to a consensus interferon molecule, wherein said polyethylene glycol molecule has a single reactive aldehyde group, said method comprising:

(a) reacting said consensus interferon with said polyethylene glycol molecule under reducing alkylation conditions, at a pH sufficiently acidic to selectively activate the α-amino group at the amino terminus of said consensus interferon; and

(b) obtaining the pegylated consensus interferon and

(c) optionally, separating the pegylated consensus interferon from non-pegylated consensus interferon.

34. A method of claim 33 wherein said polyethylene glycol molecule has a molecular weight of about 2 kDa to about 100 kDa.

35. The pegylated consensus interferon product produced by the process of claim 33.

36. A substantially homogenous preparation of monopegylated consensus interferon.

37. A preparation of claim 36 comprising about 90% monopegylated consensus interferon and about 10% unpegylated consensus interferon.

38. A pharmaceutical composition comprising: (a) a substantially homogenous preparation of monopegylated consensus interferon, said monopegylated consensus interferon consisting of a polyethylene glycol moiety connected to a consensus interferon moiety solely at the N-terminus thereof via an amine linkage; (b) fewer than 5% non-pegylated consensus interferon molecules; and (c) a pharmaceutically acceptable diluent, adjuvant or carrier.